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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/936,931	01/24/2002	Ingo Schuering	449122010600	2998
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25227 7590 06/28/2002

MORRISON & FOERSTER LLP
2000 PENNSYLVANIA AVE, NW
SUITE 5500
WASHINGTON, DC 20006-1888

EXAMINER

ELKASSABGI, HEBA

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 06/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/936,931

Applicant(s)

SCHUERING, INGO

Examiner

Heba Elkassabgi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because the abstract should be in one paragraph form and line 16 "Figure 2" deleted. Correction is required. See MPEP § 608.01(b).
2. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer

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program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or

REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a).

"Microfiche Appendices" were accepted by the Office until March 1, 2001.)

(e) BACKGROUND OF THE INVENTION.

(1) Field of the Invention.

(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

(f) BRIEF SUMMARY OF THE INVENTION.

(g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(h) DETAILED DESCRIPTION OF THE INVENTION.

(i) CLAIM OR CLAIMS (commencing on a separate sheet).

(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A

"Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 4/1, 5/4/1, 5/1 and 6/1 are rejected under 35 U.S.C. 103(a) as being unpatentable over and Applicants Prior Art (APA) and further in view of Epars (U.S. Patent 4700096) Amemiya et al. (U.S. Patent 4697114) and Weh et al. (U.S. Patent 4663551).

5. Applicants Prior Art (will be know as APA) states a permanent magnet rotor having permanent magnets that are flat in the magnetization direction and are arranged radially with respect to the rotor axis in slot like spaces between two yokes that are fixed to the rotor body. However, APA does not state that the yokes are subdivided in a circumferential direction and extend over half of one pole pitch and arranged alongside one another and connected at end points to form pole elements with the pole elements fixed to the rotor body.

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6. Epars discloses in Figure 1 a permanent magnet rotor (2) with magnets (12) having two half-yokes (pole-pieces)(8 and 19) which are subdivided in circumferential direction extending over half of one pole pitch and are arranged alongside one another, for the purpose of designing a rotor that is of a simpler form and less expensive in order to rotate at a high speed of about 15,000 rpm. Though, Epars does not show the yokes to be connected to one another by end points.

7. Amemiya et al. Discloses in Figure 2 a permanent magnet rotor in which the magnets (13) are of cube shape.

8. Weh et al. Illustrates in Figure 7 a permanent magnet rotor having end points (76) that form as pole elements and act as wedges in connecting the yokes (75), and securing the permanent magnets (74).

9. It would have been obvious to one of ordinary skill in the art to modify Applicants Prior Art with Epars and Weh et al., for the purpose of designing a rotor that is of a simpler form and less expensive in order to rotate at a high speed of about 15,000 rpm and to secure the permanent magnets (74). In concern to the cube shape magnet, Applicants Prior Art teaches a polygonal magnet, but not necessarily a cubic shape. Amemiya et al. Suggests a cubic shape in figure 2. It would have been obvious to one of ordinary skill in the art to combine the rotor of the Prior Art with the cubic magnetic of Amemiya et al. as an obvious design choice because the applicant's specification does

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not indicate that the cubic shape provides any unexpected benefit and because Amemiya et al. suggests the shape is currently used provide magnetic flux for the rotor.

10. In regards to Claim 6/1, it is vague and indefinite because it is unclear whether the Applicant is claiming an apparatus or a method of making an apparatus. The preamble indicates the invention is a rotor apparatus, but the claim limitations "in which non-magnetized magnets are magnetized before being arranged on the rotor body" and "in that the magnets are magnetized once the two half-yokes have been joined together to form a pole element" are method of making limitations. In order to advance prosecution on the merits, the examiner has considered these claims as "product by process claims". As a product by a process claim "even though the product-by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of the product does not depend on its method of production. If the product in the product by process claim is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process". *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966(Fed. Cir. 1985).

11. Claims 2/1 and 3/2/1 are rejected under 35 U.S.C. 103(a) as being unpatentable over and Applicants Prior Art (APA) and further in view of Epars (U.S. Patent 4700096) Amemiya et al. (U.S. Patent 4697114) and Burgmeier et al. (U.S. Patent 4296544).

12. Applicants Prior Art (will be know as APA) states a permanent magnet rotor having permanent magnets that are flat in the magnetization direction and are arranged radially with respect to the rotor axis in slot like spaces between two yokes that are fixed to the rotor body. However, APA does not state that the yokes are subdivided in a circumferential direction and extend over half of one pole pitch and arranged alongside one another and connected at end points to form pole elements with the pole elements fixed to the rotor body.

13. Epars discloses in Figure 1 a permanent magnet rotor (2) with magnets (12) having two half -yokes (pole- pieces)(8 and 19) which are subdivided in circumferential direction extending over half of one pole pitch and are arranged alongside one another, for the purpose of designing a rot r that is of a simpler form and less expensive in order to rotate at a high speed of about 15,000 rpm. Though, Epars does not show the yokes to be connected to one another by end points.

14. Amemiya et al. Discloses in Figure 2 a permanent magnet rotor in which the magnets (13) are of cube shape.

15. Burgmeier et al. Illustrates in Figure 2 a permanent magnet rotor (10) having permanent magnets (22) with yokes (support members) (14) having slot-like spaces (AA) that allow the cushion (material)(30) to

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Conform to the shape of the space between the support member (14) and the magnet (22). The slot like spaces are designed to provide a low bulk modulus and to provide material that can flow locally where stresses are high because of manufacturing inaccuracies or distortion caused by the high operating speeds. Slot-like spaces permits greater freedom in selecting the optimum cushion material for transmission of magnetic flux without saturation. Non-magnetic materials such as aluminum or epoxy filled fiberglass can be used for the cushion where low yield strength and large material flow is required.

16. It would have been obvious to one of ordinary skill in the art to modify Applicants Prior Art with Epars and Weh et al., for the purpose of designing a rotor that is of a simpler form and less expensive in order to rotate at a high speed of about 15,000 rpm. In concern to the cube shape magnet, Applicants Prior Art teaches a polygonal magnet, but not necessarily a cubic shape. Amemiya et al. Suggests a cubic shape in figure 2. It would have been obvious to one of ordinary skill in the art to combine the rotor of the Prior Art with the cubic magnetic of Amemiya et al. as an obvious design choice because the applicant's specification does not indicate that the cubic shape provides any unexpected benefit and because Amemiya et al. suggests the shape is currently used provide magnetic flux for the rotor. Burgmeier et al. Teaches that the slot like spaces are designed to provide a low bulk modulus and to provide material that can

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flow locally where stresses are high because of manufacturing inaccuracies or distortion caused by the high operating speeds.

Conclusion

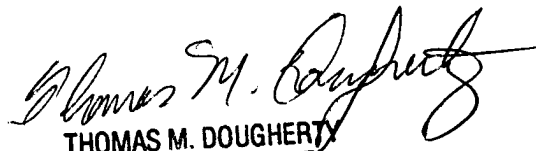
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Heba Elkassabgi whose telephone number is (703) 305-2723. The examiner can normally be reached on M-Th (6:30-3:30), and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Heba Yousri Elkassabgi

June 26, 2002


THOMAS M. DOUGHERTY
PRIMARY EXAMINER
GROUP 2100
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